# NP 304 Crop Protection and Quarantine

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Office of Scientific Quality Review

May 5, 2011
Donald P. Knowles, Scientific Quality Review Officer (January 2009-December 2010) — Date

May 11, 2011
David Marshall, Scientific Quality Review Officer (January 2011-December 2012) — Date

May 16, 2011
Michael S. Strauss, Peer Review Program Coordinator — Date

**Office of Scientific Quality Review**
Agricultural Research Service
United States Department of Agriculture

## Introduction

This Panel Report provides the background on the 2010 National Program (NP) 304 Crop Protection and Quarantine Panel Review. The project plans reviewed by these panels were applicable to the mission of the National Program to *"provide technology to manage pest populations below economic damage thresholds by the integration of environmentally compatible strategies that are based on increased understanding of the biology and ecology of insect, mite, and weed pests."*

In collaboration with the Office of Scientific Quality Review (OSQR), and the National Program Leaders, Kevin Hackett, John Lydon, Roy Scott, Dan Strickman and Ken Vick, divided 73 projects into ten panels. After considering several candidates, Dr. Don Knowles, Scientific Quality Review Officer (SQRO), appointed a chair for the ten panels (Table 1).

Table 1. Breakdown of the Crop Protection and Quarantine Panels

| Panel | Panel Chair | Panel Meeting Date | Number of Panelists | Number of Projects Reviewed |
|---|---|---|---|---|
| Panel A – Systematics | Mr. Joseph Cavey, Branch Chief, USDA, APHIS, PPQ, National Identification Services, Riverdale, MD | July 13, 2010 | 4 | 6 |
| Panel B – Postharvest and Quarantine | Mr. Alan Green, Executive Director, USDA, APHIS, Plant Protection & Quarantine, Riverdale, MD | September 9, 2010 | 4 | 4 |
| Panel C – Biocontrol: Insects & Parasites | Dr. Steve Yaninek, Professor & Head, Dept Entomology, Purdue University, West Lafayette, IN | June 30, 2010 | 5 | 5 |
| Panel C1 – Overseas Biocontrol Lab | Dr. Ernest Delfosse, Professor & Chair, Dept Entomology, Michigan State University, East Lansing, MI | July 19, 2010 | 4 | 4 |
| Panel D – Biocontrol: Insect & Microbials | Dr. Monica Elliott, Professor & Assoc Ctr Director, Ft. Lauderdale Res & Edu Ctr , University of Florida, Ft. Lauderdale, FL | June 3-4, 2010 | 6 | 11 |
| Panel E –Biocontrol: Weeds & Insects | Dr. Ragan Callaway, Professor, Div Biological Sciences, Montana State University, Missoula, MT | July 7-8, 2010 | 4 | 8 |
| Panel F – Herbicide Control: Weeds | Dr. Jill Schroeder, Professor & Interim Head, Dept Entomology, Plant Pathology & Weed Science, New Mexico State University, Las Cruces, NM | June 28-29, 2010 | 4 | 7 |
| Panel G – Insect & Control Methods | Dr. Kelley Tilmon, Associate Professor, Plant Science Dept, South Dakota State University, Brookings, SD | August 19-20, 2010 | 5 | 8 |
| Panel H – Sustainability & IPM | Dr. Michael Parrella, Professor & Chair, Dept Entomology, University of California, Davis, CA | August 27, 2010 | 5 | 10 |
| Panel I –Insect Biology | Dr. Pedro Barbosa, Professor, Dept. Entomology, University of Maryland, College Park, MD | August 11-12, 2010 | 6 | 10 |

Dr. Michael Strauss, Peer Review Program Coordinator, and Dr. Knowles presented an orientation to the Panel Chairs. Dr. Knowles subsequently approved the candidate panelists selected by each Chair. The approvals took into account conflicts of interest and followed guidelines for diversifying panel composition geographically, institutionally, and according to gender and ethnicity. Panelists demonstrated a recognizable level of knowledge of recent research within their respective fields of crop protection and quarantine. The panels received a telephone/web-based orientation. The Office of National Programs (ONP) provided an overview of the NP 304 Crop Protection and Quarantine Program. Four panels convened online and six panels convened in Beltsville, Maryland.

## Panel Review Results

Along with the Panel's written recommendations, OSQR sends each Area Director a worksheet that shows each reviewer's judgment of the degree of revision their project plan requires. This judgment is referred to as an "action class". The action classes of the panelists are also converted to a numerical equivalent, averaged, and a final action class rating is assigned.

Scientists are required to revise their project plans as appropriate and submit a formal statement to OSQR through their Area Director demonstrating their response to the Panel's recommendations. The project plans are implemented following approval and certification from the SQRO.

If the action class is:

**No Revision Required.** An excellent plan; no revision is required, but minor changes to the project plan may be suggested.

**Minor Revision Required.** The project plan is feasible as written, and requires only minor clarification or revision to increase quality to a higher level.

**Moderate Revision Required.** The project plan is basically feasible, but requires changes or revision to the work on one or more objectives, perhaps involving alteration of the experimental approaches in order to increase quality to a higher level and may need some rewriting for greater clarity.

**Major Revision Required.** There are significant flaws in the experimental design and/or approach or lack of clarity which hampers understanding. Significant revision is needed.

**Not Feasible.** The project plan, as presented, has major flaws or deficiencies, and cannot be simply revised. Deficiencies exist in approach, experimental design, presentation, or expertise which makes it unlikely to succeed.

For plans receiving one of the first three Action Classes (No Revision, Minor Revision, and Moderate Revision) scientists respond in writing to panel comments, revise their project plan as appropriate, and submit the revised plan and responses to OSQR through their Area Office. These are reviewed by the SQR Officer at OSQR and, once they are satisfied that all review concerns have been satisfactorily addressed, the project plan is certified and may be implemented.

When the Action Class is Major Revision or Not Feasible, responses and revised plans are provided as above, but must then be re-reviewed by the original review panel that provide a second set of narrative comments and Action Class based on the revised plan. If the re-review action class is no revision, minor or moderate revision the project plan may be implemented after receipt of satisfactory response and SQRO certification, as described above. Plans receiving major revision or not feasible scores on re-review are deemed to have failed. The action class and consensus comments are provided to the Area but there is no further option for revision of such plans. Low scoring or failed plans may be terminated, reassigned, or restructured, at the discretion of the Area and Office of National Programs.

## NP 304 Program Review Overview

The following is a summary of the general comments in debriefings of the first and second cycle review panels. In general, reviewers found most plans to be very strong and consistent.

In both cycles panels felt that a few of the plans were poorly integrated and, instead presented collections of disjointed pieces. They indicated that it appeared that there was not an effort on the part of researchers to weave the plans into a coherent whole. This made evaluation of such plans difficult.

Some plans seemed to have too many assigned targets and the plans themselves addressed only some of them. While it was understood that objectives could be broader in scope than the research; this proliferation of targets seemed to hamper creation of a clear focused plan.

Difficulty with hypotheses was the most frequently stated concern of panels. While they found many plans to have clearly stated hypotheses, some contained hypotheses that were stated so broadly and vaguely as to be of little use. As such these were weak and not truly testable. Many such hypotheses were, in fact, truisms and not of any real use in guiding research. Further, the distinction as to why something was considered “non hypothesis research” was unclear (was the research not amenable to formulation of a hypothesis or was this an “easy out” for the researcher?). In general it was felt that more training was needed on the formulation of hypotheses and contingencies. The reviewers suggested proposal writing workshops.

The first cycle reviewers were impressed with the quality and quantity of research in the plans. However, they felt the scientists should focus less on the literature review and more on experimental approach. The second cycle reviewers were impressed to see ARS working to stay relevant and deal with a flood of materials and samples. The issue of over long literature reviews seemed to largely have been resolved.

Reviewers found the process very educational in terms of learning about the breadth and depth of ARS research. This led to an improved opinion of USDA-ARS research. Reviewers who had participated in both review cycles indicated that there was a dramatic improvement in the quality of plans in the second cycle.

Figures 1 and 2 show the distribution of initial and final scores assigned by the First (2004) and Second (2010) Cycles Crop Protection and Quarantine Panels. The second cycle initial score was higher (4.66, moderate) than the first cycle initial score (3.98; moderate). Although both cycles improved their final scores, the first cycle had a slightly higher final score of 5.55 (minor) than the second cycle of 5.44 (minor).

Table 2. Initial and Final Scores for the First (2004) and Second (2010) Cycle Distribution for the NP 304 Crop Protection and Quarantine Panels Broken Down by Percentages

| First Cycle, 2004 | Initial Review | | | | | | Final Review | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | % No Rev | % Min Rev | % Mod Rev | % Maj Rev | % Not Feas | Avg Initial Score | % No Rev | % Min Rev | % Mod Rev | % Maj Rev | % Not Feas | Avg Final Score |
| Panel 1 - Systems & Related Approaches for Insect & Mite Management (17) | 0.0% | 11.8% | 41.2% | 47.1% | 0.0% | 3.3 | 23.5% | 29.4% | 47.1% | 0.0% | 0.0% | 5.33 |
| Panel 2 - Identification & Classification of Insects & Mites (6) | 0.0% | 16.7% | 50.0% | 16.7% | 16.7% | 3.27 | 33.3% | 16.7% | 50.0% | 0.0% | 0.0% | 5.27 |
| Panel 3 - Postharvest Pest Exclusion & Quarantine Treatment for Insects & Mites (5) | 0.0% | 80.0% | 20.0% | 0.0% | 0.0% | 5.52 | 0.0% | 80.0% | 20.0% | 0.0% | 0.0% | 5.52 |
| Panel 4 - Weed Science - Biological Control (10) | 0.0% | 10.0% | 50.0% | 40.0% | 0.0% | 3.32 | 10.0% | 10.0% | 80.0% | 0.0% | 0.0% | 4.72 |
| Panel 5 - Weed Science - Biology & Ecology of Insects & Mites (12) | 0.0% | 33.3% | 25.0% | 33.3% | 8.3% | 3.62 | 33.3% | 33.3% | 25.0% | 0.0% | 8.3% | 5.45 |
| Panel 6 - Fundamental Biology & Ecology of Insects & Mites (18) | 16.7% | 27.8% | 27.8% | 27.8% | 0.0% | 4.72 | 33.3% | 38.9% | 27.8% | 0.0% | 0.0% | 6.15 |
| Panel 7 - Biological Control & Development for Insects & Mites (18) | 11.1% | 33.3% | 22.2% | 27.8% | 5.6% | 4.29 | 27.8% | 38.9% | 33.3% | 0.0% | 0.0% | 5.78 |
| Total | 5.8% | 26.7% | 32.6% | 31.4% | 3.5% | 3.98 | 25.6% | 33.7% | 39.5% | 0.0% | 1.2% | 5.55 |
| | **Initial Review** | | | | | | **Final Review** | | | | | |
| **Second Cycle, 2010** | % No Rev | % Min Rev | % Mod Rev | % Maj Rev | % Not Feas | Avg Initial Score | % No Rev | % Min Rev | % Mod Rev | % Maj Rev | % Not Feas | Avg Final Score |
| Panel A - Systematics (6) | 0.0% | 66.7% | 33.3% | 0.0% | 0.0% | 5.47 | 0.0% | 66.7% | 33.3% | 0.0% | 0.0% | 5.47 |
| Panel B - Postharvest (4) | 0.0% | 25.0% | 50.0% | 25.0% | 0.0% | 4.2 | 0.0% | 50.0% | 50.0% | 0.0% | 0.0% | 5.1 |
| Panel C - Biocontrol: Insects & Parasites (5) | 0.0% | 40.0% | 60.0% | 0.0% | 0.0% | 4.93 | 0.0% | 40.0% | 60.0% | 0.0% | 0.0% | 4.93 |
| Panel C1 - Overseas Biocontrol Labs (4) | 0.0% | 25.0% | 75.0% | 0.0% | 0.0% | 4.6 | 0.0% | 25.0% | 75.0% | 0.0% | 0.0% | 4.6 |
| Panel D - Bicontrol: Insect & Microbials (11) | 18.2% | 27.3% | 18.2% | 36.4% | 0.0% | 4.49 | 27.3% | 36.4% | 27.3% | 9.1% | 0.0% | 5.61 |
| Panel E - Bicontrol: Weeds & Insects (8) | 0.0% | 12.5% | 62.5% | 25.0% | 0.0% | 3.88 | 0.0% | 50.0% | 50.0% | 0.0% | 0.0% | 4.88 |
| Panel F - Herbicide Control: Weeds (7) | 28.6% | 14.3% | 42.9% | 14.3% | 0.0% | 5.1 | 28.6% | 28.6% | 42.9% | 0.0% | 0.0% | 5.61 |
| Panel G - Insect & Control Methods (8) | 0.0% | 25.0% | 37.5% | 37.5% | 0.0% | 3.79 | 0.0% | 50.0% | 50.0% | 0.0% | 0.0% | 4.77 |
| Panel H - Sustainability & IPM (10) | 10.0% | 70.0% | 10.0% | 10.0% | 0.0% | 5.6 | 10.0% | 80.0% | 10.0% | 0.0% | 0.0% | 6 |
| Panel I - Insect Biology (10) | 10.0% | 40.0% | 20.0% | 30.0% | 0.0% | 4.49 | 40.0% | 40.0% | 20.0% | 0.0% | 0.0% | 6.29 |
| Total | 8.2% | 35.6% | 35.6% | 20.5% | 0.0% | 4.66 | 13.7% | 47.9% | 37.0% | 1.4% | 0.0% | 5.44 |

Figure 1. Initial Review Scores for the First (2004) and Second (2010) Cycle Distribution for the NP 304 Crop Protection and Quarantine Panels (average score 3.98; 4.66, respectively). The number of plans reviewed by each cycle is in parentheses. Numbers over columns are the actual number of plans receiving that score.

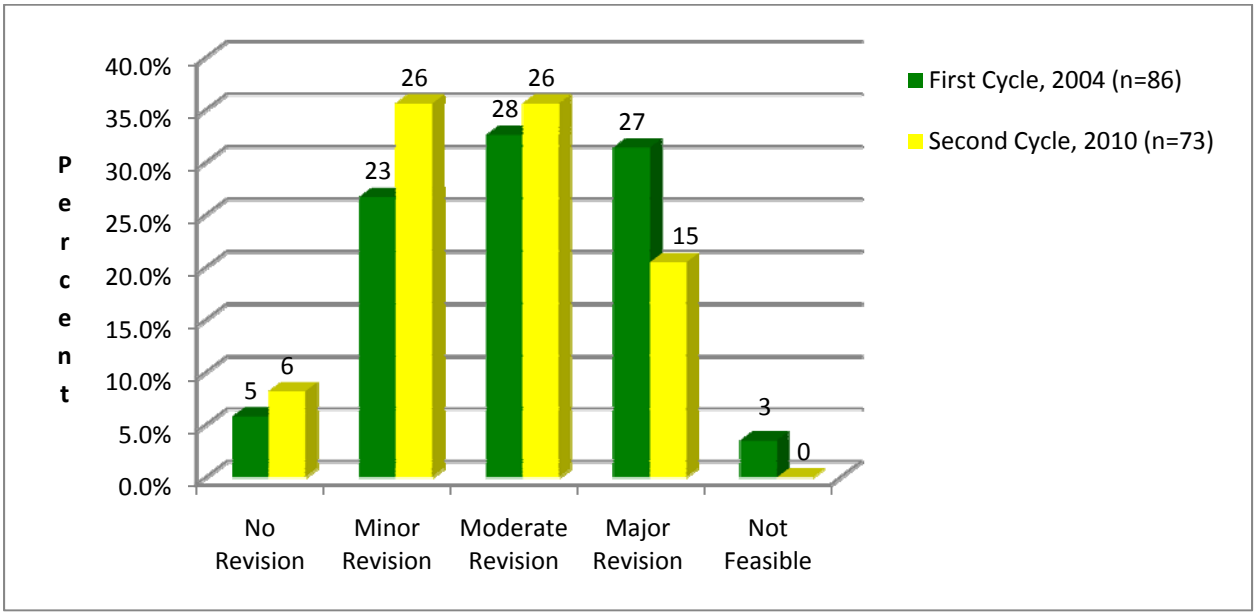



Figure 2. Final Review Scores for the First (2004) and Second (2010) Cycle Distribution for the NP 304 Crop Protection and Quarantine Panels (average score 5.55; 5.44, respectively). The number of plans reviewed by each cycle is in parentheses. Number over columns are the actual number of plans receiving that score.

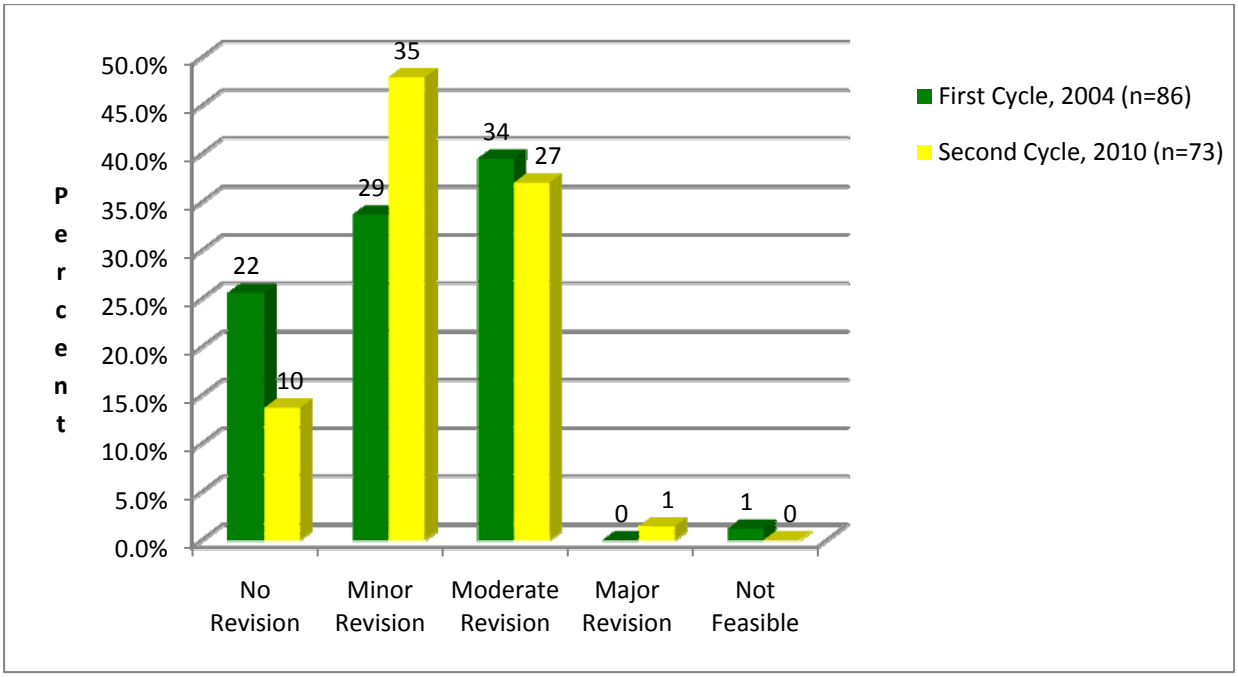


Figure 3. Initial and Final Scores for the First Cycle (2004) Crop Protection and Quarantine Panels

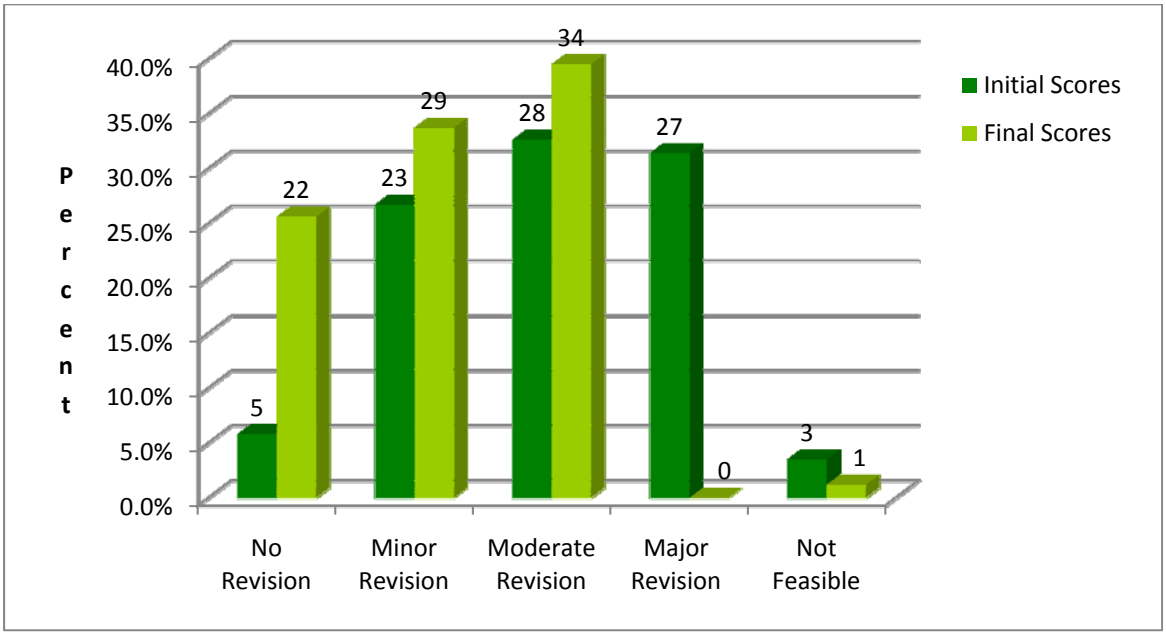
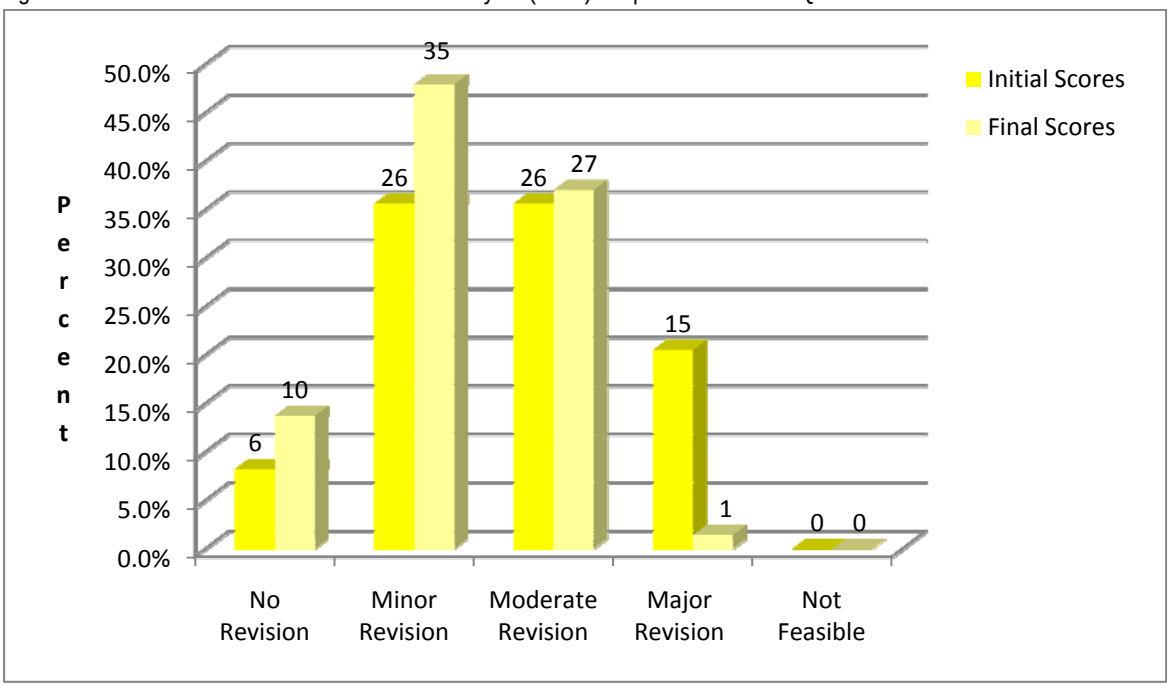



Figure 4. Initial and Final Scores for the Second Cycle (2010) Crop Protection and Quarantine Panels



## Panel Characteristics

ARS places responsibility for panel member selection primarily on external and independent Panel Chairs. ARS scientists, managers and the Office of National Programs may recommend panelists but the Panel Chair is under no obligation to use these recommendations. Several factors such as qualification, diversity, and availability play a role in who is selected for an ARS peer review panel. The ten panels were composed of nationally and internationally recognized experts to review 73 projects primarily coded to the Crop Protection and Quarantine Program (See Table 1, page 2). The information and charts below provide key characteristics of the Crop Protection and Quarantine Panels. This information should be read in conjunction with the Panel Chair Statements.

## Affiliations

Peer reviewers are affiliated with several types of institutions, especially universities, government, special interest groups, and industry. In some cases, peer reviewers have recently retired but are active as consultants, scientific editorial board members, and are members of professional societies. Also, several government-employed panelists are recognized for both their government affiliation and faculty ranking. Tables 2 & 3 show the type of institutions with which the Crop Protection and Quarantine Panel members were affiliated with at the time of the review.

Table 2. Faculty Rank of Panelists Affiliated with Universities

| Panel | Professor | Associate Professor | Assistant Professor |
|---|---|---|---|
| Panel A – Systematics | 3 | | |
| Panel B – Postharvest | 2 | | 2 |
| Panel C – Biocontrol: Insects & Parasites | 5 | | |
| Panel C1 – Overseas Biocontrol Labs | 3 | 2 | |
| Panel D – Biocontrol: Insect & Microbials | 3 | 3 | 1 |
| Panel E – Biocontrol: Weeds & Insects | 2 | 1 | 1 |
| Panel F – Herbicide Control: Weeds | 2 | 3 | |
| Panel G – Insect & Control Methods | 4 | 1 | 1 |
| Panel H – Sustainability & IPM | 4 | 2 | |
| Panel I – Insect Biology | 2 | 3 | 2 |

Table 3. Other Affiliations Represented on the Panels

| Panel | Government | Industry & Industry Organizations | Other |
|---|---|---|---|
| Panel A – Systematics | 2 | | |
| Panel B – Postharvest | 1 | | |
| Panel C – Biocontrol: Insects & Parasites | | | |
| Panel C1 – Overseas Biocontrol Labs | | | |
| Panel D – Biocontrol: Insect & Microbials | | | |
| Panel E – Biocontrol: Weeds & Insects | 1 | | |
| Panel F – Herbicide Control: Weeds | | | |
| Panel G – Insect & Control Methods | | | |
| Panel H – Sustainability & IPM | | | |
| Panel I – Insect Biology | | | |

## Accomplishments

The peer review process is intended to be rigorous and objective, striving for the highest possible scientific credibility. In general, panelists are expected to hold a PhD unless the norm for their discipline tends to not require doctorate level education to achieve the highest recognition and qualification (e.g., engineers and modeling specialists). Panelists are also judged by their most recent professional accomplishments (e.g., awards and publications completed in the last five years). Finally, the panelists who are currently performing or leading research to address a problem similar to those addressed in the National Program are preferred. Table 4 describes their characteristics in the Crop Protection and Quarantine Panels.

Table 4. The Panels' Recent Accomplishments

| Panel | Published Articles Recently | Received Recent Professional Awards | Having Review Experience | Currently Performing Research |
|---|---|---|---|---|
| Panel A – Systematics | 3 | 3 | 4 | 3 |
| Panel B – Postharvest | 5 | 2 | 4 | 3 |
| Panel C – Biocontrol: Insects & Parasites | 6 | 4 | 5 | 6 |
| Panel C1 – Overseas Biocontrol Labs | 4 | 4 | 5 | 3 |
| Panel D – Biocontrol: Insect & Microbials | 7 | 1 | 7 | 7 |
| Panel E – Biocontrol: Weeds & Insects | 5 | 4 | 5 | 5 |
| Panel F – Herbicide Control: Weeds | 5 | 4 | 5 | 5 |
| Panel G – Insect & Control Methods | 6 | 5 | 6 | 6 |
| Panel H – Sustainability & IPM | 6 | 3 | 6 | 6 |
| Panel I – Insect Biology | 7 | 5 | 7 | 7 |

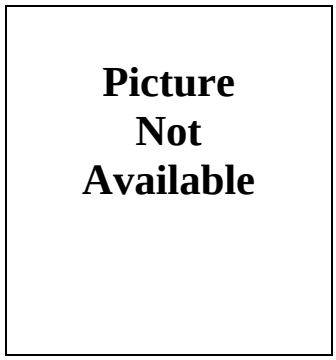
## Current and Previous ARS Employment

The Research Title of the 1998 Farm Bill 105-185, mandated ARS's requirements for the peer review of ARS research projects: 1) panel peer reviews of each research project were mandated at least every five years and 2) the majority of peer reviewers must be external (non-ARS scientists).

Table 6. Affiliations with ARS

| Panel | Currently Employed by ARS | Formerly Employed by ARS |
|---|---|---|
| Panel A – Systematics | | |
| Panel B – Postharvest | | 1 |
| Panel C – Biocontrol: Insects & Parasites | | 1 |
| Panel C1 – Overseas Biocontrol Labs | | 1 |
| Panel D – Biocontrol: Insect & Microbials | | |
| Panel E – Biocontrol: Weeds & Insects | | |
| Panel F – Herbicide Control: Weeds | | 1 |
| Panel G – Insect & Control Methods | | |
| Panel H – Sustainability & IPM | | |
| Panel I – Insect Biology | | |

## Crop Protection and Quarantine Panel Chairs



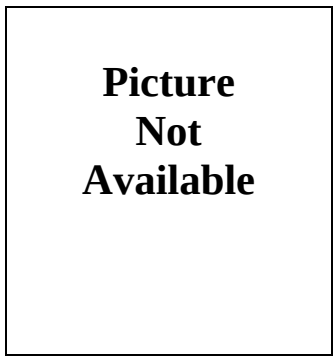

**Mr. Joseph Cavey, ARS Panel Chair**

***Panel A – Systematics***

Branch Chief, USDA, APHIS, Plant Protection and Quarantine (PPQ), Plant, Health Programs (PHP), National Identification Services, Riverdale, MD

Education: B.S. Zoology, University of Maryland

Mr. Cavey is currently the Branch Chief for National Identification Services staff with USDA APHIS, Plant Protection and Quarantine, Plant Health Programs in Riverdale, Maryland. His current responsibilities include managing PPQ's identification system involving taxonomic and molecular diagnosis of plants and plant pests, developing national policy for quarantine decisions regarding exotic organisms intercepted during quarantine inspections, managing preparation of organism and pathway initiated risk analyses, and maintaining PPQ's pest interception database. He has thirty-five years' experience in APHIS as a biological technician, Plant Protection and Quarantine Officer, Area Entomology Identifier, Headquarters Staff Entomologist and Branch Chief.




**Mr. Alan S. Green, ARS Panel Chair**

***Panel B - Postharvest***

Executive Director, USDA, APHIS, Plant Protection and Quarantine, Plant Health Programs, Riverdale, MD

Education: M.S. Plant Pathology, Rutgers University

Mr. Green has 31 years of experience in USDA, beginning his career in 1979 with the Federal Grain Inspection Service in Philadelphia. He is currently serving as the Executive Director of the APHIS, PHP, PPQ since June 2004. PHP includes multiple staffs responsible for pest exclusion activities and managing of phytosanitary trade issues. Mr. Green has held various key positions in APHIS including but not limited to: PPQ Officer in Philadelphia and Chief Staff Officer for Foreign Pest Programs (working extensively on fruit fly eradication programs for Latin America). His two most recent previous PPQ positions included: (1) Director for PPQ's Phytosanitary Issues Management staff which is responsible for resolving phytosanitary barriers restricting U.S. agricultural exports and providing leadership for the U.S. export certification program, and (2) Director for PPQ's Quarantine Policy, Analysis and Support staff which is responsible for developing policies relating to plant quarantine and pest exclusion activities.

**Dr. John Stephen Yaninek, Ph.D., ARS Panel Chair**

***Panel C – Biocontrol: Insects and Parasites***

Professor & Head, Department of Entomology, Purdue University, West Lafayette, IN

Education: B.A.; M.S. and Ph.D. University of California, CA

Steve Yaninek is a professor and head of the Department of Entomology at Purdue University. Prior to working at Purdue, he was a national program leader in the USDA Cooperative State Research, Education, and Extension Service in Washington D.C. for biological control and applied ecology, and served as manager of two extramural grant programs. From 1983 to 1998 he was a research scientist with the International Institute of Tropical Agriculture (IITA) in Nigeria and Benin in West Africa, and from 1980 to 1983 he worked as a research associate at UC-Berkeley.

**Dr. Ernest Delfosse, Ph.D., ARS Panel Chair**

***Panel C1 – Overseas Biocontrol Lab***

Professor and Chair, Department of Entomology, Michigan State University, East Lansing, MI

Education: B.S. University of Louisville; M.S. South Dakota University; Ph.D. University of Florida

Dr. Ernest S. ("Del") Delfosse is an internationally recognized authority on biological control and integrated pest management (IPM) of weeds. He has worked primarily with weeds of agriculture and conservation areas. He has extensive experience in foreign exploration for natural enemies of weeds in Australia, southern Africa, the United States, and parts of Mediterranean Europe. His other areas of professional interest include risk analysis, decision analysis, host-specificity of phytophagous and entomophagous natural enemies, conflict-of-interest in biological control, philosophy and ethics of science, and development of risk-and science-based biological control and plant protection regulations.

**Dr. Monica Elliott, Ph.D. ARS Panel Chair**

***Panel D: Biocontrol: Insect and Microbials***

Professor and Associate Center Director, Fort Lauderdale Research and Education Center, University of Florida, Fort Lauderdale, FL

Education: B.A. & B.S. Eastern Illinois University; M.S. & Ph.D. Montana State University

Dr. Elliott is currently the Center Director at the Fort Lauderdale Research and Education Center and Professor of Plant Pathology where she devotes her time between research, extension and administration.

**Dr. Ragan Callaway, Ph.D., ARS Panel Chair**

***Panel E – Biocontrol: Weeds and Insects***

Professor, Division of Biological Sciences, Montana State University, Missoula, MT

Education: B.S. Westmont College, M.S. University of Tennessee, Ph.D. University of California

Dr. Callaway's lab is a horizontally organized group of postdoctoral, graduate student, and undergraduate collaborators. The primary focus of the research in his lab is on how organisms interact with each other, and they are interested in all aspects of ecology. These interactions include direct interactions, such as competition for resources, allelopathy, and facilitation; and indirect interactions mediated by herbivores, soil microbes, and other competitors. Dr. Callaway continues to study facilitative interactions among plants, mostly alpine habitats and in collaboration with the international Alpine Pals research group. Because of how his graduate students have influenced his interests over the last 15 years, most of Dr. Callaway's time is now spent on exploring how exotic invaders dominate habitats without the opportunity for local adaption, and suppress native species which have had ample opportunity to locally adapt.

**Dr. Jill Schroeder, Ph.D. ARS Panel Chair**

***Panel F – Herbicide: Control: Weeds***

Professor, Department of Entomology, New Mexico State University, Las Cruces, NM

Education: B.A. Macalester College; M.S. University of Minnesota; Ph.D. University of Georgia

Dr. Schroeder's fields of interest include weed management in irrigated cropping systems of New Mexico including chile peppers, cotton, wheat, corn and grain sorghum; herbicide persistence and soil interactions. Projects include interdisciplinary, cooperative research to identify interactions between weeds and other pests. Some of Dr. Schroeder's current projects include Chile/nutsedge/Nematode Interactions and invasive characteristics of scouring rush on irrigation canals. She is also serving as weed science subject matter expert at EPA-Office of Pesticide Programs in Washington D.C. on behalf of the Weed Science Society of America.

**Dr. Kelley Tilmon, Ph.D., ARS Panel Chair**

***Panel G – Insect and Control Methods***

Associate Professor, Plant Science Department, South Dakota State University, Brookings, SD

Education: B.A. & M.S. University of Delaware; Ph.D. Cornell University

Dr. Tilmon's research program is centered around insect ecology, with particular emphasis on biological control and integrated pest management of pest insects in leguminous crops. She currently studies soybean insect pests and their natural enemies. Other current projects include collaborative work with the South Dakota Department of Game, Fish and Parks to estimate the population size of an endangered insect species in South Dakota.

**Dr. Michael Parrella, Ph.D., ARS Panel Chair**

***Panel H – Sustainability and IPM***

Professor and Associate Dean, Department of Entomology
University of California, Davis, CA

Education: B.S. Rutgers University; M.S. & Ph.D. Virginia Polytechnic Institute and State University

Dr. Parrella's research and outreach program are focused on developing and implementing IPM strategies with an emphasis on biological control for the Environmental Horticulture industry. This includes floriculture, nursery and bedding production operations and landscape plants in the urban environment. He works with major pests including western flower thrips, silverleaf and greenhouse whiteflies, *Liriomyza* leafminers, green peach and melon aphids, psyllids, and spider mites.

**Dr. Pedro Barbosa, Ph.D., ARS Panel Chair**

***Panel I – Insect Biology***

Professor, Department of Entomology, University of Maryland, College Park, MD

Education: B.S. City College of New York; M.S. & Ph.D. University of Massachusetts

Dr. Barbosa's research interests are in insect-plant and three trophic level interactions. He is specifically interested in using data on three trophic level interactions and the influence of plants on natural enemies and natural enemy communities to help develop IPM strategies. Thus, current research aims to elucidate plant factors that enhance biological control by insect parasitoids and predators and determine the feasibility of bioengineering these traits into plants. The objective of another current study is to understand the population dynamics of scarce species. Dr. Barbosa's approach to this issue is to describe and understand patterns of parasitism and predation of insect assemblages and determine whether and how tri-trophic level interactions among herbivores, plants, and natural enemies (parasitoids and predators) structure assemblages of scarce herbivore species.

## Panel Chair Statements

All Panel Chairs are required to turn in a statement that describes how their panel was conducted and possibly provide comments on the review process that might not otherwise be found in the individual research project plan peer reviews. Panel Chairs are given some guidelines for writing their statements, but are nevertheless free to discuss what they believe is most important for broad audiences.

USDA

United States Department of Agriculture

Animal and Plant Health Inspection Service

4700 River Road
Riverdale, MD
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**July 16, 2010**

Dr. Don Knowles, Scientific Quality Review Officer
Office of Scientific Quality Review
Agricultural Research Service, USDA
5601 Sunnyside Avenue, MS 5142
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Dr. Knowles:

NP 304 Panel A – Systematics met via teleconference on July 13, 2010. The four panel members were well prepared for the session. Their expertise was evident and well suited to the review of six CRIS plans under scrutiny. Discussions appropriately focused on areas for improvement, resulting in supportive and creative recommendations.

Preparation by primary and secondary reviewers was thorough. The other reviewers had studied the prepared material in all cases and contributed to each discussion. Duration of discussion per CRIS plan was appropriate. Discussion leaders summarized the plans well, and the group focused on key elements requiring improvement and reconsideration. Logistically, telecommunications worked seamlessly, and all participants could view modifications to individual review drafts as they occurred. Differing opinions or evaluations were reconciled in all cases; the group was especially professional in this regard. Reviewers seemed comfortable during the process, even though all were not previously experienced with the ARS review process. I believe we can attribute that observation to thorough preparation provided to the chair and panel by the OSQR staff prior to the meeting. Scoring procedures were well understood by participants; scores were assigned anonymously and without incident. Critique writing procedures were greatly facilitated compared to my previous experience with this process some 10 years ago. OSQR consolidated the primary and secondary reviewers' comments, provided them to Panel members several days prior to the meeting, and modified the documents as discussions dictated in real time. As a result, reviews were nearly complete at the conclusion of the meeting.

In general, the review proceeded smoothly. Ample lead time prior to the meeting should be provided for the chair and other panel members to review the consolidated written draft reviews authored by the primary and secondary reviewers. The several work days provided to us for this review were adequate, but more lead time may be necessary for other panels in the future.

In conclusion, this peer review of systematics research projects was effective. Panel members appreciated time saved by precluding travel. The group found areas for improvement in all submitted plans even though none of the plans require major revision. Many scores were unanimous indicating surprising consensus for a group of very opinionated individuals. Each participant was obviously qualified, interested, committed to and engaged in the process. Recommendations offered by the panel should benefit ARS-SEL in the next five years.

Joseph F. Cavey
Branch Chief
National Identification Services
USDA, APHIS, PPQ
Riverdale, MD

United States
Department of
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Service

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March 7, 2011

Dr. Don Knowles, Scientific Quality Review Officer
Office of Scientific Quality Review
Agricultural Research Service, USDA
5601 Sunnyside Avenue, MS 5142
Beltsville, MD 20705

Dear Dr. Knowles,

Below you will find my Postharvest Panel Chair Statement, including responses to the 4 questions:

*1. Did the Postharvest Panel have discussions that reflected scientific peer review and approaches to improve the quality of research that may not have been considered by Agency scientists and staff?*

The panel had broad scientific expertise, as well as expertise in the specific area under review. Although probably 90% or more of ideas (and most insightful criticisms) came from the primary or secondary reviewer, all contributed in discussions of all four projects.

The Panel members did an excellent job of analyzing the research proposals, considering factors such as, clarity of objectives, likelihood of success; need for proposed work to expand on previous research; and potential for research to be bridged into improving industry practices.

I thought we were able to steer panel members from discussions of issues outside the scope of the review. The greatest disparity in our four project reviews was where each primary reviewer "set the bar" on issues such as the potential benefit of the research and whether the proposed research expanded on previous work. Simply put, at least one primary reviewer was a very "tough grader." The other panel members lacked the insight of that particular field to adequately refute the primary reviewer's criticisms.

*2. What were the most notable (positive or negative) characteristics of the discussion process and why?*

Being a panel reviewer is a little bit like climbing Mt. Fuji—a wise man does it once, a fool does it again. It took many after-work hours to read and comment on all the papers and be prepared for the discussions. But, I would say everyone on the panel met their obligations.

The logistical arrangements were fine. There was a deliberate attempt to exclude reviewers with conflicts of interest, with 3 of my choices rejected in the panel selection process.

We were well prepared in how the process would operate and the solicitation of scores was the easiest part of the process.

*3. What suggestions do you have to improve the peer review process?*

None, really. I am not sure how to address the problem of an overly critical reviewer. If this is a common problem, then you may want to prepare some coaching instructions for the panel chair.

*4. Overall, was this an effective peer review panel?*

I believe that the end result accomplished what it was intended. It validated the usefulness of the proposed research and made meaningful suggestions for improving the value of the proposals.

Should you have any questions, please feel free to contact me on (301) 734-8261.

Sincerely,

Alan S. Green
Executive Director
Plant Health Programs
Plant Protection and Quarantine

PURDUE
UNIVERSITY

DEPARTMENT OF ENTOMOLOGY

February 25, 2011

Dr. Don Knowles, Scientific Quality Review Officer
Office of Scientific Quality Review
Agricultural Research Service, USDA
5601 Sunnyside Avenue, MS 5142
Beltsville, MD 20705

Dear Dr. Knowles,

As chairman of the USDA NP 304 Panel C - Biocontrol: Insects and Parasites (2010) this past June, I found the member reviews and subsequent panel discussion to be high quality, rigorous and thorough. Panel members brought state-of-the-art science into the discussion, and offered suggestions that reflected real opportunities and leading edge strategies to advance the current research agenda.

We had the right set of independent experts identified and selected for the projects that were reviewed. Panel members took their responsibilities seriously and were prepared for the scheduled discussion. The review process was a good balance of instruction, review material, lead time, and panel discussion. Projects received the attention they needed, and on balance, the amount of time set aside for the panel discussion was appropriate. The online review format worked well. Panel members were comfortable and engaged in the online discussion. Educating panel members over the phone before the review helped all concern to understand and negotiate the administration, and made the process go smoothly.

I think the review process worked well. This may be in part because the projects we considered were straight forward, and did not require any special instructions to get the job done, and our panel members had a good working knowledge that spanned more than one project.

Overall, I feel our members accomplished our objectives as a review panel, and offered reasonable and worthwhile comments, critiques and suggestions. The responses we received from project members bear this out.

Sincerely,

Steve Yaninek
Professor, Head and Chair of the Review Committee

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**5 June 2010**

Dr. Don Knowles, Scientific Quality Review Officer
Office of Scientific Quality Review
Agricultural Research Service, USDA
5601 Sunnyside Avenue, MS 5142
Beltsville, MD 20705

Dear Dr. Knowles:

This letter is in regards to NP 304 Panel D – Biocontrol: Insect and Microbials (2010), which met on June 3-4, 2010 at the OSQR in Beltsville. I served as chair for this panel.

Overall, the panel members were well prepared, which allowed for fair and credible discussions regarding the projects we were assigned to review. While the panel may not have agreed with the objectives of some of the projects, after further discussion with you and Dr. Strauss, we came to a full understanding that while the objectives were not necessarily formulated by the scientists, the subobjectives were those of the PIs for each project. The panel closely examined each subobjective of each project to determine the scientific validity of the subobjective and determine if the procedures and methods set forth were adequate for each subobjective. During the discussions, panel members not only provided their assessment of the projects, but they also provided suggestions that may improve the quality of research being proposed.

The panel operated at a very high level of professionalism, with significant interaction among all panel members. Everyone understood their roles and criteria for review. The primary and secondary reviewers were well-prepared to lead the discussions. The time spent discussing each project was highly variable, although predictable based on the quality of each project (either quality of the science or the quality of writing). Low-quality projects significantly slowed the process down, both in terms of discussion and in the writing of the evaluations. The most notable characteristic of the panel was its consensus on the final scores for each project, despite the significant diversity represented by the panel members and the notable independent thinking of each member. Therefore, I do believe this was an effective peer review panel.

My primary suggestion regarding the peer review process would be to provide the panel chair with a list of a project's subobjectives early in the process. The list of subobjectives, rather than the objectives, would have been much more useful in assigning the primary and secondary reviewers.

The panel's primary suggestion regarding project reviews is not with the review process itself, but with the initial formulation of the objectives (which ultimately does impact the review panel). While we understand the need of the USDA-ARS to respond to stakeholders when developing objectives, we also strongly suggest that objectives need to be developed that will yield good science and have validity within the scientific community. For example, open-ended objectives are misleading and ambiguous and provide no structure or directions to the scientists, which is then reflected in the subobjectives proposed by the PIs.

Sincerely,

Monica L. Elliott, Ph.D./J.D.
Professor and Interim Center Director

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February 11, 2011

Dr. Don Knowles, Scientific Quality Review Officer
Office of Scientific Quality Review
Agricultural Research Service, USDA
5601 Sunnyside Avenue, MS 5142
Beltsville, MD 20705

Dear Dr. Knowles:

I am writing to comment on the review conducted by USDA NP 304 Panel E - Biocontrol: Weeds and Insects. I believe this panel functioned well to conduct sound and credible scientific peer review, I think we suggested and recommended important ideas, creative thinking, and alternative approaches that improved the quality of research that may not have been considered by Agency scientists and staff.

Regarding the most notable characteristics of the discussion process: the amount of preparation required for the discussion was substantial, but reasonable, the time spent discussing each project while in panel was appropriate and efficient, the logistic arrangements by your staff were outstanding - they really made things so much easier, the long distance preparation and explanation of the review criteria and the scoring and critique writing procedures were exceptionally helpful.

The only suggestions I might have to improve the peer review process were those discussed at the end of the panel meeting, primarily I think that more go/no go input into the science from peer reviewers earlier in the process would improve the overall outcome of the research.

I think this was an effective peer review panel.

Sincerely,

Ragan Callaway
Professor
The University of Montana

NMSU COLLEGE OF AGRICULTURAL, CONSUMER, AND ENVIRONMENTAL SCIENCES
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July 12, 2010

Dr. Don Knowles, Scientific Quality Review Officer
Office of Scientific Quality Review
Agricultural Research Service, USDA
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Dear Dr. Knowles:

It was a pleasure to participate in the review process for NP 304 Panel F – Herbicide Control: Weeds (2010) programs within USDA/ARS. The panel was excellent and I am grateful for the panel member's willingness to participate in this process, in spite of their very busy schedules. The panel members obviously spent many hours reading the projects, doing background research, and preparing thoughtful reviews prior to the panel meeting. They were also prepared to discuss the projects for which they were not directly responsible. The panel members took the time to make sure they understood the goal of and their roles in the review process, both prior to and during the panel meeting.

I found the discussions during the panel meeting to be thorough (each project discussion was between 45 and 90 minutes), professional, and engaging. All panel members, except for a single case where a conflict of interest was noted and the panelist left the room, discussed the strengths and weakness of the projects and provided constructive suggestions for improvement or clarification. The panel went out of their way to provide input regarding alternate or additional approaches for the scientists to consider as they revise their projects. I was impressed by my colleagues' dedication and attention to detail during the entire panel meeting.

The panel members provided several questions and suggestions for consideration in the future as ARS refines project guidelines and processes.

1. Do the project objectives compliment other ARS weed science projects? If so, how does the project 'fit' with other ARS projects?
2. What are the opportunities to collaborate across ARS laboratories to address questions that impact multiple regions such as climate, herbicide resistance, or weed biology and management? How are the ARS laboratories collaborating with state programs that are conducting research addressing similar questions?

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3. The panel felt strongly that fundamental research into the biology of weeds is critical to weed management solutions in the long term. However, they would have like to have seen additional information about the potential application of the research results from basic programs. For example, will other laboratories conduct research to apply the results from basic programs?
4. Panel members expressed philosophical concerns about the feasibility of conducting research that is based on predicting what may occur more than a few years into the future. They suggested that during the process of developing objectives for each project, the program managers and investigators work together to make sure the objectives identify feasible goals that lead to tangible results.
5. The sections on contingencies needed clarification in some cases. Some statements were so general that the reviewers could not assess how the investigators would handle problems that came up during the project period.
6. Some of the projects described their research as developing integrated weed management systems; however, the studies as described were individual components of integrated management. The reviewers suggested that ARS laboratories are ideally suited to assess integrated programs in long-term systems based studies. The panel suggested that a focus of these programs should be on how to optimize the weed management system and include evaluation of new technologies as they are developed.

Thank you for the opportunity to serve as a participant in this review process. The panel members and I learned a great deal from our experience and gained valuable insight into the work being done by these high quality laboratories as well as the review process for ARS programs.

The work done by the Office of Scientific Quality Review, particularly Dr. Mike Strauss and Linda Daly-Lucas, to provide training, logistical arrangements, and meeting facilities made the panel meeting go very well. Please do not hesitate to contact me if you have any questions about my comments.

Best Regards,

Jill Schroeder

Jill Schroeder, PhD
Professor, Weed Science

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February 17, 2011

Dr. Don Knowles, Scientific Quality Review Officer
Office of Scientific Quality Review
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Dear Dr. Knowles,

This letter is in regard to USDA NP 304 Panel G - Insect and Control Methods, on which I served as Panel Chair. This panel conducted two meetings: the first review in August, 2010, and a follow-up web conference in January, 2011 to evaluate revised projects rated for major revision in the first review.

During both meetings, this panel engaged in a sound process of scientific review. I was very impressed with the professionalism and expertise of the panel members, and their conscientious and constructive approach to the review process. I believe that this panel was able to make many observations and creative suggestions that may have been useful to the investigators who authored the research plans we reviewed. And example of this is found in one of the proposals flagged for major revision. The panel suggested that a collaboration with a certain specialist might prove very helpful to the investigators to enhance one of their objectives. We learned in the re-review that the lead investigator was excited by this possibility, had contacted the specialist, and was in the process of arranging a collaboration that he felt would greatly benefit the project.

On the whole, the panel review process went very smoothly. Panelists received adequate training in the panel's mission and the appropriate process and procedures and they came well-prepared to discuss the proposals. The logistical arrangements were also very good. The web conference process went much better than I thought it would, in fact. I did feel that perhaps the amount of time allocated for the in-person process was a bit tight. We managed to cover each proposal adequately, but there were times when we had to press rather hard to do so. However, there is a tradeoff involved here. Review processes tend to magically expand to fill any amount of time allotted for them, but there is a point of diminishing returns where additional time does not result in enhanced review quality (and may result in reviewer fatigue). Perhaps it is best to leave the panel meeting at 1.5 days; however, OSQR might wish to poll panel managers about whether 2 days would serve better.

One suggestion I have that might help improve the peer review process is to allow review panels more latitude in suggesting changes to the project objectives. We were instructed that the major

objectives of each research plan, as written, were off limits for review or comment, because these were assigned to the investigators by their superiors based on many considerations about which the panelists would have no knowledge. This hands-off nature of the objectives was greatly stressed to the panel. Of course there would be a danger in allowing a panel to essentially re-write the project by altering the major objectives at will. On the other hand, there were a couple of instances where the panel had very sound, well-considered, and informed reasons why an alteration to one of a project's major objectives would have greatly increased the potential benefit and impact of the project. It was frustrating to the Panel to be unable to make such suggestions.

Overall, I found this to be a very effective and professional panel who worked well together and provided valuable feedback for the improvement of the projects we reviewed. It was a pleasure to work with the members of this panel, and a privilege to be asked to lead them.

Regards,

Kelley Jean Tilmon

Kelley J. Tilmon
Associate Professor of Entomology

UNIVERSITY OF CALIFORNIA, DAVIS

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**March 18, 2011**

Dr. Don Knowles, Scientific Quality Review Officer
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1. The review panel (NP 304 Panel H – Sustainability and IPM) (2010) had extensive discussions that exemplified a sound and credible scientific peer review. Each of the panel members was chosen for their particular level of expertise that was reflected in the broad projects being reviewed. There were many examples where this panel had ideas and expressed alternative approaches to research that had not been considered by agency scientists and staff. These proposals were not just rubber-stamped, but we seriously reviewed each of them and made suggestions to improve the quality of the research that we anticipate will ultimately improve the impact of the research.

2. This was a very conscientious review panel – each member was assigned as a primary and secondary reviewer for each of the proposals and all came prepared to discuss their reviews. In addition, these were prepared and sent ahead of time for all to see prior to convening in Washington, DC. We completed all discussions/reviews in one day. Taking another day would not have been worthwhile. Staff assigned to the review panel were very efficient and solicitous with clear explanations as to how we were to proceed. Ultimately, this was why we were able to finish in one day. In addition, I chose each panel member for their area of expertise in addition to their ability to interact effectively in a group format. In other words, I wanted tough reviewers who could respectively agree/disagree with their colleagues in a professional manner. We did lack diversity on the panel and I regret this. It did take me a while to put the panel together. Everyone is extremely busy and I ended asking about 12 people to serve on the panel before finding 5 who agreed to do this. Perhaps offering a hire stipend may be a way to inspire more potential reviewers to say 'yes'. The level of preparation for the discussion enabled us to spend adequate time discussing each project. We went through the proposals, and then had time to go back to those that needed more discussion. Logistical arrangements were more than adequate. There were several grants where we had to exclude some reviewers who had a conflict with the project(s), but this was not an issue. Each of the panel members was vetted ahead of time by staff for conflict of interests and they self-identified where this occurred. On the one hand you want to avoid this as much as possible, while recognizing that a world-class scientific review panel from the university system across the US should have some overlap/connection with these 10 major ARS programs focused on Sustainability and IPM. If you have a panel that is completely disconnected from these projects, than I would question the quality of that review panel. All panel members understood the review criteria and their roles as peer reviewers. The scoring of proposals and writing of critiques was also well understood and proceeded without any problems or issues.

3. What suggestions do you have to improve the peer review process?

The review went off seamlessly and I do not have any suggestions to improve the process. I think we do have to meet as a group for a thorough review, but it may be getting to the point where we could meet via internet conference. We did this when we had a proposal that required some revision, and this went well. I am not sure you want to do that for the full, formal review. Getting reimbursement checks out to the panel members in a bit more timely fashion would be better. I assume honorarium checks may be waiting until I complete this report; so maybe some more prodding of the Panel Chair may be in order.

4. Overall, was this an effective peer review panel?

As indicated above, it was an effective review panel.

Sincerely,

Michael P. Parrella
Professor and Chair, Department of Entomology, University of California, Davis
Chair, NP 304 Panel H

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February 14, 2011

Dr. Don Knowles, Scientific Quality Review Officer
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Re: Panel Chair Statement

I hereby submit comments and a summary of the final phase of the deliberations of the USDA NP 304 Panel I - Insect Biology Panel. The discussions and recommendations made by the panel were based on scientific peer reviews that reflected the highest caliber of scientific scholarship, and hopefully have provided important guidance or alternative approaches to improve the quality of the proposed research. Understanding the review criteria and roles served by peer reviewers was crucial as was having panel members that understood, in great depth, the nature of applied research, as well panel members that were unfamiliar with such research but very familiar with theoretical concepts and approaches not typically used be applied researchers, but which represented cutting-edge thinking that would improve the quality of research produced and the likelihood of success completion of objectives.

I would suggest that the peer review process would be improved if the panel had some information on the degree to which the research topic and approach used by PIs

was mandated by administrators in their units. Nevertheless, overall this was an effective peer review panel.

Yours truly,

P. Barbosa

Pedro Barbosa

# Projects Reviewed by the Crop Protection and Quarantine Panels

## Beltsville Area

**John Brown**

Systematics of Lepidoptera: Invasive Species, Pests, and Biological Control Agents

**Matthew Greenstone**

Sustainable Management of Invasive and Indigenous Insects of Urban Landscapes

**Thomas Henry**

Systematics of Hemiptera and Related Groups: Plant Pests, Predators, and Disease Vectors

**Robert Kula**

Systematics of Parasitic and Herbivorous Wasps of Agricultural Importance

**Steven Lingafelter**

Systematics of Beetles Important to Agriculture, Landscape Plants, and Biological Control

**Allen Norrbom**

Systematics of Flies of Agricultural and Environmental Importance

**Ronald Ochoa**

Mite Systematics and Arthropod Diagnostics with Emphasis on Invasive Species

**John Teasdale**

Development of Multi-Tactic Weed Management Systems for Sustainable Crop Production

**Fernando Vega**

Development of Biological Control Technologies and Strategies for Arthropod Pests of Perennial Tropical Crops Important to the U.S., Particularly Coffee

**Donald Weber**

Insect Management Systems for Urban Small Farms and Gardens

## International

**Juan Briano**

Discovery, Identification, and Risk-Assessment of Biological Control Agents for Suppression of South American Invasive Weeds and Insects in the U.S.

**Matthew Purcell**

Discovery and Development of Biological Control Agents for Weeds and Insect Pests that are Invasive in the U.S. and Native to Australia and Southeast Asia

**Livvy Williams**

Discovery, Biology, and Ecology of Natural Enemies of Insect Pests of Crop and Urban and Natural Ecosystems

**Livvy Williams**

Discovery and Evaluation of Classical Biological Control Agents for Invasive Eurasian Weeds Affecting Agricultural and Natural Areas

## Mid South Area

**C. Douglas Boyette**

Improvement of Bioherbicides Strategies for Invasive Weeds in Southern Cropping Systems

**Robert Hoagland**

Characterization and Mitigation of Herbicide-Resistant and Recalcitrant Weeds

**Ryan Jackson**

Insecticide Resistance Management and New Control Strategies for Pests of Corn, Cotton, Sorghum, Soybean, and Sweet Potato

**Omaththage Perera**

Effect of Resistance on Insect Pest Management in Transgenic Cotton

**Jean Morales-Ramos**

Mass Production of Biological Control Agents

**Gordon Snodgrass**

Control of Tarnished Plant Bugs by Biocontrol and Other Methods

**William White**

Developing Integrated Weed and Insect Management Systems for Efficient and Sustainable Sugarcane Production

## Midwest Area

**Allard Cossé**

Semiochemicals for the Management of Agricultural Pests

**Richard Hellmich**

Ecologically-Based Management of Insect Pests of Corn, with Emphasis on Corn Borers, Rootworms, and Cutworms

**Bruce Hibbard**

Plant Resistance, Biology, and Resistance Management of Corn Pests, with Emphasis on Western Corn Rootworm

**Mark Jackson**

Production, Stabilization, and Formulation of Microbial Agents and their Natural Products

**Holly Popham**

Development of High Quality, Cost-Effective, Mass-Reared Biocontrol Agents for Small and Urban Farms, Organic Farms and Greenhouses

**Michael Reding**

Management of Insects that Attack Horticultural, Turf and Nursery Crops

**Gerald Sims**

Ecology, Management and Environmental Impact of Weedy and Invasive Plant Species in a Changing Climate

**David Stanley**

Eicosanoid-Mediated Immune Signaling and Molecular Immune Signaling Inhibitors in Piercing/Sucking Insect Pests of Small and Urban Vegetable Farms

## North Atlantic Area

**Dana Berner**

Discovery and Characterization of Plant Pathogens for Biological Control of Invasive Weeds from their Native Range

**Jian Duan**

Biocontrol of Invasive Species such as Emerald Ash Borer, and Quarantine Services

**Donna Gibson**

Fungal Resources for Biological Control and High-Value Uses

**Kim Hoelmer**

Classical Biological Control of Insect Pests of Crops, Emphasizing Tarnished Plant Bug, Soybean Aphid, and Brown Marmorated Stink Bug

**Keith Hopper**

Genetics and Evolution of Host Specificity of Insect Biological Control Agents, Emphasizing Aphids and Moths

**Lindsey Milbrath**

Biological Control of Swallow-Worts, Invasive Weeds of the Northeastern United States

**Michael Smith**

Biocontrol and Other Technologies for Control of Invasive Species with Emphasis on Asian Longhorned Beetle and Related Species

**John Vandenberg**

IPM-Based Strategies for Incorporating Microbial Biological Control for Management of Greenhouse and Nursery Crop Pests

## Northern Plains Area

**Franklin Arthur**

Ecology, Genomics, and Management of Stored Product Insects

**David Branson**

Ecology and Management of Grasshoppers and Other Insect Pests in the Northern Great Plains

**Anthony Caesar**

Reducing the Impact of Invasive Weeds in Northern Great Plains Rangelands through Biological Control and Community Restoration

**Michael Foley**

Novel Weed Management Solutions:  A Basis in Understanding Bud and Seed Dormancy

**Roger Leopold**

Insect Cryopreservation, Dormancy, Genetics and Biochemistry

**Jonathan Lundgren**

Ecologically Based Pest Management in Modern Cropping Systems

## Pacific West Area

**Lars Anderson**

Aquatic and Riparian Weed Management to Protect U.S. Water Resources in the Far West United States

**Denny Bruck**

Integrated Pest Management for Insect Pests of Horticultural Crops

**Raymond Carruthers**

Landscape-Level Assessment and Management of Invasive Weeds and their Impacts in Agricultural, and Natural Systems

**David Horton**

An Integrated Approach to Control of Diseases and Insect Pests in Potato Production

**Peter Landolt**

Biorational Management of Insect Pests of Temperate Tree Fruits

**Steven Naranjo**

Sustainable Pest Management Strategies for Arid-Land Crops

**Alberto Pantoja**

Integrated Pest Management for High Latitude Agriculture

**Roger Sheley**

Development of a Decision-Support System for the Ecologically-Based Management of Cheatgrass and Medusahead-Infested Rangeland

**Lincoln Smith**

Biological Control of Invasive Terrestrial and Riparian Weeds in the Far Western U.S. Region, with Emphasis on Thistles, Brooms, and Cape-Ivy

**Keirith Snyder**

Ecological Interactions in Integrated and Biologically-Based Management of Invasive Plant Species in Western Rangelands

**Dale Spurgeon**

Integrated Management of Cotton Pests: Plant Genetics, Biological Control, and Novel Methods of Pest Elimination

**Roger Vargas**

Biology, Control, and Area-Wide Management of Fruit Flies and Other Quarantine Pests

**Marisa Wall**

Pre- and Postharvest Treatment of Tropical and Other Commodities for Quarantine Security, Quality Maintenance, and Value Enhancement

## South Atlantic Area

**James Carpenter**

Sterile Insect Control of Invasive Pests, with a Focus on Moths

**Ted Center**

Development and Evaluation of Biological Control Agents for Invasive Species Threatening the Everglades and Other Natural and Managed Systems

**Alfred Handler**

Biologically-Based Technologies for Management of Crop Insect Pests in Local and Area-Wide Programs

**Howard Harrison**

Utilizing Herbicide Tolerant and Competitive Cultivars and Innovative Cultural Practices to Enhance Weed Management in Vegetable Crops

**D. Michael Jackson**

Biologically Based Techniques for Management of Vegetable Pests

**Stephen Lapointe**

IPM Technologies for Insect Pests of Orchard Crops

**Cindy McKenzie**

Subtropical Insect Pests of Vegetables and Ornamental Plants

**Stuart Reitz**

Biologically Based Management of Invasive Insect Pests and Weeds

**Eric Schmelz**

Chemical Biology of Insect and Plant Signaling Systems

**David Shapiro-Ilan**

Integrated Pest Management for Key Pests of Pecan and Peach

**P. Glynn Tillman**

Insect Ecology and Sustainable Systems for Insect Pest Management in the Southeastern Region

**Theodore Webster**

Integrated Weed Management Systems for Organic and Conventional Crops of the Southeastern Coastal Plain

## Southern Plains Area

**John Adamczyk**

IPM Strategies for Managing Pests of Subtropical Row Crops

**John Burd**

Biologically Based Management of Cereal Aphids

**John Goolsby**

Biological Control Strategies for Invasive Weeds of Southwestern U.S. Watersheds

**Joseph Patt**

Biological Control of Invasive Pests of Orchard and Vegetable Crops in the Subtropical South

**John Westbrook**

Ecologically Based Management of Boll Weevils and Other Row Crop Pests Under Transition to Boll Weevil Eradication in Temperate Regions

## Office of Scientific Quality Review

The Office of Scientific Quality Review (OSQR) manages and implements the ARS peer review system for research projects, including peer review policies, processes and procedures. OSQR centrally coordinates and conducts panel peer reviews for project plans within ARS' National Program every five years.

OSQR sets the schedule of National Program Review sessions. The OSQR Team is responsible for:

- Panel organization and composition (number of panels and the scientific disciplines needed)
- Distribution of project plans
- Reviewer instruction and panel orientation
- The distribution of review results in ARS
- Notification to panelists of the Agency response to review recommendations
- *Ad hoc* or re-review of project plans

## Contact

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